

CLAIMS:

What is claimed is:

1. An implant for implantation in a patient, comprising:
an implant body formed from a polymeric material; and
a resorbable radiopaque marker formed from a non-metallic, non-bone derived material and provided in the implant body to permit visualization of a location of the implant without obscuring visualization of changes surrounding the implant when the implant is placed in a patient, and which does not interfere with other imaging modalities such as CT or MRI scans.
2. The implant as set forth in claim 1, wherein the implant is resorbable and the implant body is formed from a resorbable polymeric material.
3. The implant as set forth in claim 2, wherein the resorbable radiopaque marker comprises at least one of calcium phosphate, hydroxylapatite, tricalcium phosphate, calcium sulfates, "plaster of Paris," barium apatites, other apatites known to occur in nature, calcium carbonates, calcium oxides, and combinations of the above materials, with a suitable amount of polymer additive component to allow for formation of the marker.
4. The implant as set forth in claim 3, wherein the radiopaque marker comprises barium sulfate and polymer additive components.
5. The implant as set forth in claim 2, wherein the resorbable polymeric material comprises polylactide.
6. The implant as set forth in claim 2, wherein the resorbable polymeric material comprises at least one of biocompatible resorbable polymers, derivatives thereof, mixtures thereof, and copolymers thereof.

7. The implant as set forth in claim 6, wherein the resorbable polymeric material comprise at least one of polylactide, polyglycolide, derivatives thereof, mixtures thereof, and copolymers thereof.

8. The implant as set forth in claim 1, wherein the implant body comprises a nonresorbable polymer material.

9. The implant as set forth in claim 2, wherein the resorbable radiopaque marker comprises beads.

10. The implant as set forth in claim 2, wherein the implant body is formed as a sheet having a length, a width and a thickness.

11. The implant as set forth in claim 2, wherein the implant body has a complex three-dimensional shape.

12. The implant as set forth in claim 11, wherein the implant body is formed in the shape of a screw.

13. The implant as set forth in claim 2, comprising a plurality of resorbable radiopaque markers.

14. The implant as set forth in claim 2, wherein the resorbable radiopaque markers are sized to reduce visual obstruction of tissues surrounding the implant when the implant is placed in a patient.

15. The implant as set forth in claim 2, wherein the resorbable radiopaque markers are substantially spherical.

16. The implant as set forth in claim 15, wherein the resorbable radiopaque markers have a diameter of about 0.25 mm to about 3.0 mm.

17. The implant as set forth in claim 2, wherein the resorbable radiopaque marker is distributed in the implant body in a configuration effective to reduce visual obstruction of changes in tissues surrounding the implant when the implant is placed in a patient.

18. The implant as set forth in claim 2, wherein the resorbable radiopaque marker comprises barium sulfate and polymer additive components.

19. The implant as set forth in claim 18, wherein the resorbable radiopaque marker is manufactured using a sufficient amount of polymer additive components to allow processing into a bead form.

20. The implant as set forth in claim 18, wherein the resorbable radiopaque marker comprises 30-70 volume percent barium sulfate and 70-30 volume percent polymer additive components.

21. The implant as set forth in claim 20, wherein the resorbable radiopaque marker comprises particles formed using an injection molding process.

22. The implant as set forth in claim 2, wherein the resorbable radiopaque marker comprises particles formed using an injection molding process.

23. The implant as set forth in claim 18, wherein the resorbable radiopaque marker comprises about 10 volume percent or less polymer additive components.

24. The implant as set forth in claim 23, wherein the resorbable radiopaque marker is manufactured using a sufficient amount of polymer additive components to allow processing into a bead form.

25. The implant as set forth in claim 23, wherein the resorbable radiopaque marker comprises particles formed using an extrusion process.

26. The implant as set forth in claim 2, wherein the resorbable radiopaque marker is formed using a pressing process.

27. The implant as set forth in claim 23, wherein the resorbable radiopaque marker is formed using a pressing process.

28. The implant as set forth in claim 2, wherein the resorbable radiopaque marker comprises particles formed using a pressing process.

29. The implant as set forth in claim 18, wherein the polymer additive components comprise butyl stearate, canola oil; stable flake-S solidified oil, NA 860-000, medium weight polyethylene, and hi flow polystyrene.

30. A resorbable implant for implantation in a patient, comprising:
an implant body comprising a resorbable polymeric material having any complex three-dimensional shape; and
a plurality of radiopaque markers formed from a non-metallic material dispersed throughout at least a portion of the implant body to facilitate radiographic visualization of the implant when the implant is placed in a patient.

31. The implant as set forth in claim 30, wherein the resorbable polymeric material comprises at least one of biocompatible resorbable polymers, derivatives thereof, mixtures thereof, and copolymers thereof.

32. The implant as set forth in claim 31, wherein the resorbable polymeric material comprises at least one of polylactide, polyglycolide, derivatives thereof, mixtures thereof, and copolymers thereof.

33. The implant as set forth in claim 30, wherein the implant body is formed as a sheet having a length and a width.

34. The implant as set forth in claim 30, wherein the implant body is formed having a complex three-dimensional shape.

35. The implant as set forth in claim 30, wherein the resorbable radiopaque markers are beads.

36. The implant as set forth in claim 30, wherein the radiopaque markers are sized to reduce visual obstruction of tissues surrounding the implant when the implant is placed in a patient.

37. The implant as set forth in claim 30, wherein the radiopaque markers are substantially spherical.

38. The implant as set forth in claim 37, wherein the radiopaque markers have diameters of about 0.25 mm to about 3.0 mm.

39. The implant as set forth in claim 30, wherein the radiopaque markers are distributed in the implant body in a configuration effective to reduce visual obstruction of changes in tissues surrounding the implant when the implant is placed in a patient.

40. The implant as set forth in claim 30, wherein the radiopaque markers comprise barium sulfate and polymer additive components.

41. The implant as set forth in claim 40, wherein the radiopaque markers comprise 30-70 volume percent barium sulfate and 70-30 volume percent polymer additive components.

42. The implant as set forth in claim 40, wherein the polymer additive components comprise butyl stearate, canola oil; stable flake-S solidified oil, NA 860-000, medium weight polyethylene, and hi flow polystyrene.

43. The implant as set forth in claim 40, wherein the resorbable radiopaque marker has been manufactured using a sufficient amount of polymer additive components to allow processing into a bead form.

44. The implant as set forth in claim 43, wherein the resorbable radiopaque marker comprises about 10 volume percent or less polymer additive components.

45. The implant as set forth in 30, wherein the resorbable radiopaque marker comprises particles.

46. The implant as set forth in claim 45, wherein the resorbable radiopaque marker comprises at least one of calcium phosphate, hydroxylapatite, tricalcium phosphate, calcium sulfates, "plaster of Paris," barium apatites, other apatites known to occur in nature, calcium carbonates, calcium oxides, and combinations of the above materials, with a suitable amount of polymer additive component to allow for formation of the particles.

47. The implant as set forth in claim 46, wherein the particles are beads.

48. The implant as set forth in claim 46, wherein the radiopaque marker comprises barium sulfate and polymer additive components.